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The association study of antioxidant status and antioxidant genes polymorphisms in patients with ischemic heart disease in the Republic of Tatarstan

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Abstract

Ischemic heart disease (IHD) is a multifactorial disease caused by the interplay of environmental risk factors with multiple predisposing genes. The present study was undertaken to evaluate the role of genetic polymorphism, oxidative stress and antioxidant status in IHD patients. IHD patients are characterized by a change of the blood serum's antioxidant status, which is expressed in significant increases/decreases of the total antioxidant activity, lipid hydroperoxides and ceruloplasmin indicators in comparison with normal values and also in significant increases of the malondialdehyde for the patients with acute myocardial infarction. This study also showed that the level of some of the examined antioxidant system indicators depends on polymorphism of the genes, which encode the enzymatic antioxidant system pool (genes of catalase, extracellular and mitochondrial superoxide dismutase and glutathione peroxidase). © IDOSI Publications, 2013.

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Keywords

Acute myocardial infarction, Antioxidant status, Antioxidative defense, Exertional angina, Gene polymorphism, Genetic predisposition